

# Claims

- [c1] 1.A method of fracturing rock by inducing shear stress on the rock surface, comprising the step of directing radiation generated by a high-intensity arc lamp operating in excess of 4000°C onto the rock surface.
- [c2] 2.The method of claim 1 wherein the arc lamp operates in excess of 8000°C.
- [c3] 3.The method of claim 2 wherein the arc lamp operates at about 12,000°C.
- [c4] 4.A method of fracturing rock by inducing shear stress or tensile stress, or shear stress and tensile stress in the rock by directing radiation generated by a high-intensity arc lamp and varying the intensity of the arc lamp to achieve either shear stress or tensile stress, or shear stress and tensile stress, as desired.
- [c5] 5.A method of fracturing a brittle material, comprising the step of directing radiation generated by a high-intensity arc lamp operating in excess of 4000° C upon a mass of rock until the rock fractures due to induced thermal stresses.

- [c6] 6. The method of claim 5 wherein the brittle material comprises rock.
- [c7] 7. The method of claim 1 wherein the brittle material comprises ceramic material.